

## AIR QUALITY PERMIT

Issued to: ConocoPhillips Company      Permit: #2907-03  
P.O. Box 30198      Administrative Amendment Request Received: 12/01/04  
Billings, MT 59107-0198      Department Decision on Administrative  
   Amendment Issued: 12/13/04  
   Permit Final: 12/29/04  
   AFS #: 049-0011

An air quality permit, with conditions, is hereby granted to ConocoPhillips Company (ConocoPhillips), pursuant to Sections 75-2-204, 211 and 215, Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq.*, as amended, for the following:

### Section I: Permitted Facilities

#### A. Plant Location

ConocoPhillips operates a bulk gasoline terminal, which receives gasoline and distillate fuels from the Yellowstone Pipeline and distributes them around the state via railcar and tank truck. This facility is located in the SE¼ of the NE¼ of Section 28, Township 10 North, Range 3 West, in Lewis and Clark County, Montana. The facility is known as the Helena bulk terminal. A complete list of permitted equipment is contained in the permit analysis.

#### B. Current Permit Action

A letter from ConocoPhillips dated November 24, 2004, and received by the Montana Department of Environmental Quality (Department) December 1, 2004, notified the Department that ConocoPhillips planned to install a 2,000-gallon vertical tank used to store a lubricity additive. Since the uncontrolled potential to emit (PTE) of the 2,000-gallon vertical tank is less than 15 tons per year of any regulated pollutant the tank was added to the permit under the provisions of ARM 17.8.745 Montana Air Quality Permits-Exclusion for De Minimis Changes. Permit #2907-03 has also been updated to reflect current permit language and rule references used by the Department.

### Section II: Product Railcar Loading Rack

#### A. Conditions and Limitations:

1. ConocoPhillips' railcar loading rack shall be equipped with a vapor recovery system designed to collect the organic compounds displaced from gasoline railcar product loading and vent those emissions to the flare (ARM 17.8.749).
2. The vapor recovery system shall be designed to prevent any volatile organic compound (VOC) vapors collected at one loading position from passing to another loading position (ARM 17.8.749).

3. ConocoPhillips shall install, operate, and maintain an enclosed flare, as specified in their application for their Montana Air Quality Permit #2907-00 and all supporting documentation, to control VOC and hazardous air pollutant (HAP) emissions from the railcar gasoline loading rack (ARM 17.8.752).
4. Loading of liquid product into gasoline railcars shall be limited to vapor-tight gasoline railcars using the following procedures (ARM 17.8.749):
  - a. ConocoPhillips shall obtain the vapor tightness documentation described in EPA Method 27 (or another method approved by the Department) or Department of Transportation (DOT) certification methods for each gasoline railcar that is to be loaded at the railcar loading rack;
  - b. ConocoPhillips shall require the railcar identification number to be recorded as each gasoline railcar is loaded at the terminal; and
  - c. ConocoPhillips shall take the necessary steps to ensure that any non-vapor-tight gasoline railcar will not be reloaded at the railcar loading rack until vapor tightness documentation for that railcar is obtained.
5. ConocoPhillips shall ensure that loading of gasoline railcars at the railcar loading rack are made only into railcars equipped with vapor recovery equipment that is compatible with the terminal's vapor recovery system (ARM 17.8.749).
6. ConocoPhillips shall ensure that the terminal's and the railcar's vapor recovery systems are connected during each loading of a gasoline railcar at the railcar loading rack (ARM 17.8.749).
7. The vapor recovery and liquid loading equipment shall be designed and operated to prevent gauge pressure in the gasoline railcar from exceeding 4,500 Pascals (Pa) (450 millimeters (mm) of water) during product loading. This level shall not be exceeded when measured by the procedures specified in the test methods and procedures in Attachment 1 to this permit (ARM 17.8.749).
8. No pressure-vacuum vent in the permitted terminal's vapor recovery system shall begin to open at a system pressure less than 4,500 Pa (450 mm of water) (ARM 17.8.749).
9. The total VOC emissions to the atmosphere from the flare due to loading liquid product into gasoline railcars shall not exceed 10.0 milligrams per liter (mg/L) of gasoline loaded (ARM 17.8.749 and ARM 17.8.752).
10. The total carbon monoxide (CO) emissions to the atmosphere from the flare due to loading liquid product into gasoline railcars shall not exceed 10.0 mg/L of gasoline loaded (ARM 17.8.752).
11. The total nitrogen oxide (NO<sub>x</sub>) emissions to the atmosphere from the flare due to loading liquid product into gasoline railcars shall not exceed 4.0 mg/L of gasoline loaded (ARM 17.8.752).

12. Loading of gasoline railcars shall be restricted to the use of submerged fill and dedicated normal service (ARM 17.8.752).
13. ConocoPhillips shall not cause or authorize to be discharged into the atmosphere from the enclosed flare:
  - a. Any visible emissions that exhibit an opacity of 10% or greater (ARM 17.8.749); and
  - b. Any particulate emissions in excess of 0.10 grains per dry standard cubic foot (gr/dscf) corrected to 12% carbon dioxide (CO<sub>2</sub>) (ARM 17.8.749).
14. ConocoPhillips shall install and continuously operate a thermocouple and an associated recorder, or any other equivalent device, to detect the presence of a flame (ARM 17.8.752).
15. ConocoPhillips shall provide written notification to the Department of the intent to use an alternative flare other than the proposed John Zink flare. ConocoPhillips shall certify that the alternative flare has equivalent emission guarantees and is of similar design to the John Zink flare. ConocoPhillips shall submit manufacturer specifications and design drawings of the alternative flare (ARM 17.8.749).

**B. Testing Requirements**

1. The flare shall be initially tested for total VOCs, and compliance demonstrated with the emission limitation contained in Section II.A.9. within 180 days of initial startup and every 5 years after the initial test (ARM 17.8.105).
2. ConocoPhillips shall use the test methods and procedures in Attachments 1 and 2 to this permit, or other test methods and procedures approved by the Department, to determine compliance with Sections II.A.7. and II.A.9. of this permit (ARM 17.8.105).
3. All compliance source tests shall be conducted in accordance with the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).
4. The Department may require further testing (ARM 17.8.105).

**C. Inspection and Repair Requirements**

Each calendar month, the vapor recovery system, the vapor control system, and the railcar loading rack shall be inspected for total organic compound leaks, liquid or vapor, during product transfer operations. For purposes of this requirement, detection methods incorporating sight, sound, or smell are acceptable. Each detection of a leak shall be recorded and the source of the leak repaired within 15 calendar days after it is detected (ARM 17.8.105 and ARM 17.8.749).

D. Recordkeeping Requirements

1. The railcar vapor tightness documentation required in Section II.A.4. of this permit shall be kept on file at the terminal, in a permanent form, and be made available for inspection and shall be updated at least once per year to reflect current test results (ARM 17.8.749).
2. A record of each monthly leak inspection required under Section II.C. of this permit shall be kept on file at the terminal. Inspection records shall include, at a minimum, the following information (ARM 17.8.749):
  - a. Date of inspection;
  - b. Findings (may indicate no leaks discovered or location, nature, and severity of each leak);
  - c. Leak determination method;
  - d. Corrective action (date each leak repaired and reasons for any repair interval in excess of 15 calendar days); and
  - e. Inspector's name and signature.
3. ConocoPhillips shall maintain quarterly records of gasoline and distillate throughput for the railcar loading rack. This shall include all products shipped and received at the railcar loading rack (ARM 17.8.749).
4. All records compiled in accordance with this permit must be maintained by ConocoPhillips as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

Section III: Tank Truck Loading Rack

A. Conditions and Limitations

1. ConocoPhillips shall not exceed, on a rolling 12-month basis, 7,008,000 barrels of gasoline and distillate product combined throughput for the truck loadout operation (ARM 17.8.1204(3)).
2. ConocoPhillips shall comply with all applicable standards and limitations, and the reporting, recordkeeping, and notification requirements of 40 Code of Federal Regulations (CFR) Part 60, Standards of Performance for New Stationary Sources (NSPS), Subpart A – General Provisions, and Subpart XX – Standards of Performance for Bulk Gasoline Terminals (ARM 17.8.340 and 40 CFR 60, Subparts A and XX):

- a. ConocoPhillips' truck loading rack shall be equipped with a vapor collection system designed to collect the total organic compounds displaced from loading tank trucks and vent those emissions to the flare (ARM 17.8.340, 40 CFR 60, Subpart XX, and ARM 17.8.752).
  - b. The vapor collection system shall be designed to prevent any VOC vapors collected at one loading rack from passing to another loading rack (ARM 17.8.340 and 40 CFR 60, Subpart XX).
  - c. Loading of liquid product into gasoline tank trucks shall be limited to vapor-tight gasoline tank trucks using the procedures listed under 40 CFR 60.502(e) (ARM 17.8.340 and 40 CFR 60, Subpart XX).
  - d. ConocoPhillips shall ensure that loading of gasoline tank trucks at the truck loading rack are made only into tanks equipped with vapor collection equipment that is compatible with the terminal's vapor collection system (ARM 17.8.340 and 40 CFR 60, Subpart XX).
  - e. ConocoPhillips shall ensure that the terminal's and the tank truck's vapor collection systems are connected during each loading of a gasoline tank truck at the truck loading rack (ARM 17.8.340 and 40 CFR 60, Subpart XX).
  - f. The vapor recovery and liquid loading equipment shall be designed and operated to prevent gauge pressure in the delivery tank from exceeding 4,500 Pa (450 mm of water) during product loading. This level shall not be exceeded when measured by the procedures 40 CFR 60.503(d) (ARM 17.8.340 and 40 CFR 60, Subpart XX).
  - g. No pressure-vacuum vent in the permitted terminal's vapor recovery system shall begin to open at a system pressure less than 4,500 Pa (450 mm of water) (ARM 17.8.340 and 40 CFR 60, Subpart XX).
  - h. Each calendar month, the vapor recovery system, the flare, and each loading rack handling gasoline shall be inspected during the loading of gasoline tank trucks for total organic compounds liquid or vapor leaks. For purposes of this requirement, detection methods incorporating sight, sound, or smell are acceptable. Each detection of a leak shall be recorded and the source of the leak repaired within 15 calendar days after it is detected (ARM 17.8.340 and 40 CFR 60, Subpart XX).
3. ConocoPhillips shall install, operate, and maintain an air-assisted, smokeless flare, as specified in their application for Permit #2907-01 and all supporting documentation, to control VOC and HAP emissions from the truck loading rack (ARM 17.8.752).
  4. Loading of tank trucks shall be restricted to the use of submerged fill and dedicated normal service (ARM 17.8.749).

5. The total VOC emissions to the atmosphere from the flare due to loading liquid product into tank trucks shall not exceed 10.0 mg/L of gasoline loaded (ARM 17.8.1204(3)).
6. The total CO emissions to the atmosphere from the flare due to loading liquid product into tank trucks shall not exceed 10.0 mg/L of gasoline loaded (ARM 17.8.752).
7. The total NO<sub>x</sub> emissions to the atmosphere from the flare due to loading liquid product into tank trucks shall not exceed 4.0 mg/L of gasoline loaded (ARM 17.8.752).
8. ConocoPhillips shall not cause or authorize to be discharged into the atmosphere from the truck loading rack flare:
  - a. Any visible emissions that exhibit an opacity of 10% or greater (ARM 17.8.752); and
  - b. Any particulate emissions in excess of 0.10 gr/dscf corrected to 12% CO<sub>2</sub> (ARM 17.8.752).
9. The flare shall be operated with a flame present at all times. ConocoPhillips shall install and continuously operate a thermocouple and an associated recorder, or any other equivalent device, to detect the presence of a flame (ARM 17.8.752).
10. ConocoPhillips shall provide written notification to the Department of the intent to use an alternative flare other than the proposed John Zink flare. ConocoPhillips shall certify that the alternative flare has equivalent emission guarantees and is of similar design to the John Zink flare. ConocoPhillips shall submit manufacturer specifications and design drawings of the alternative flare (ARM 17.8.749).

B. Testing Requirements

1. The flare shall be initially tested for VOC, and compliance demonstrated with the emission limitation contained in Section III.A.5. within 180 days of initial startup and every 5 years after the initial test (ARM 17.8.105).
2. All compliance source tests shall be conducted in accordance with the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).
3. The Department may require further testing (ARM 17.8.105).

C. Recordkeeping Requirements

1. The tank truck vapor tightness documentation required in Section III.A.2. of this permit shall be kept on file at the terminal in a permanent form available for inspection. The documentation file for each gasoline truck shall be updated at least once per year to reflect current test results. The documentation shall include

the information listed in 40 CFR 60.505(b) (ARM 17.8.340 and 40 CFR 60, Subpart XX).

2. A record of each monthly leak inspection required under Section III.A.2. of this permit shall be kept on file at the terminal. Inspection records shall include, at a minimum, the following information (ARM 17.8.340 and 40 CFR 60, Subpart XX):
  - a. Date of inspection;
  - b. Findings (may indicate no leaks discovered or location, nature, and severity of each leak);
  - c. Leak determination method;
  - d. Corrective action (date each leak repaired and reasons for any repair interval in excess of 15 calendar days); and
  - e. Inspector's name and signature.
3. ConocoPhillips shall document, by month, the gasoline and distillate throughput for the truck loading rack. By the 25<sup>th</sup> day of each month, ConocoPhillips shall total the amount of throughput during the previous 12 months to verify compliance with the limitation in Section II.A.1. A written report of the compliance verification shall be submitted along with annual emission inventory (ARM 17.8.749).
4. All records compiled in accordance with this permit must be maintained by ConocoPhillips as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

Section IV: Fugitive Emission Sources

A. Limitations and Conditions

ConocoPhillips shall ensure that (ARM 17.8.749):

1. All valves used shall be high quality valves containing high quality packing.
2. All open-ended valves shall be of the same quality as the valves described above. Any open-ended line shall be sealed with a valve.
3. All pumps used in gasoline service shall be equipped with either a single or double mechanical seal system.

B. Inspection and Repair Requirements

1. Each calendar month, all valves, flanges, pump seals, and open-ended lines shall be inspected for total organic compound leaks. For purposes of this requirement, detection methods incorporating sight, sound, or smell are acceptable (ARM 17.8.749).
2. ConocoPhillips shall (ARM 17.8.749):
  - a. Make a first attempt at repair for any leak not later than 5 calendar days after the leak is detected; and
  - b. Repair any leak as soon as practicable, but not later than 15 calendar days after it is detected except as provided in Section IV.B.3. below.
3. Delay of repair of equipment for which a leak has been detected will be allowed if repair is technically infeasible without a source shutdown. Such equipment shall be repaired before the end of the first source shutdown after detection of the leak (ARM 17.8.749).

C. Recordkeeping Requirements

A record of each monthly leak inspection required under Section IV.B.1. of this permit shall be kept on file at the terminal. Inspection records shall include, at a minimum, the following information (ARM 17.8.749):

1. Date of inspection;
2. Findings (may indicate no leaks discovered or location, nature, and severity of each leak);
3. Leak determination method;
4. Corrective action (date each leak repaired and reasons for any repair interval in excess of 15 calendar days); and
5. Inspector's name and signature.

Section V: Additional Requirements

Operational Reporting Requirements

- A. ConocoPhillips shall supply the Department with annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory contained in the permit analysis.

Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. This information may be used to calculate operating fees, based on actual emissions from the facility, and/or to verify compliance



with permit limitations (ARM 17.8.505). ConocoPhillips shall submit the following information annually to the Department by March 1 of each year; the information may be submitted along with the annual emission inventory (ARM 17.8.505).

1. The type of petroleum liquid stored in each tank.
2. The average true vapor pressure of the petroleum liquid stored in each tank.
3. The estimated annual throughput of petroleum liquids for each tank in gallons.
4. The annual throughput of distillate and gasoline for the railcar loading rack in barrels.
5. The annual throughput of distillate and gasoline for the truck loading rack in barrels, in conjunction with the VOC testing results for the truck loading rack flare.

For reporting purposes, the tanks shall be identified using the tank numbers contained in Section I.B. of the permit analysis.

- B. ConocoPhillips shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745, that would include a change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its permitted operation or the addition of a new emission unit. The notice must be submitted to the Department, in writing, 10 days prior to start up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).
- C. ConocoPhillips shall annually certify that its actual emissions are less than those that would require the source to obtain an air quality operating permit as required by ARM 17.8.1204(3)(b). The annual certification shall comply with the certification requirements of ARM 17.8.1207. The annual certification shall be submitted along with the annual emission inventory information (ARM 17.8.749 and ARM 17.8.1204).
- D. The Department shall be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation, or to continue for a period greater than 4 hours (ARM 17.8.110).

#### Section VI: Notification

ConocoPhillips shall provide the Department with written notification of the following dates within the specified time periods (ARM 17.8.749):

- A. Commencement of construction within 30 days after the commencement of construction of the truck loading rack and the truck loading rack flare (ARM 17.8.749).
- B. Anticipated start-up date of the truck loading rack and flare within 30 to 60 days prior to the actual start-up date (ARM 17.8.749).

- C. Actual start-up date of the truck loading rack and flare within 15 days after the actual start-up date (ARM 17.8.749).

Section VII: General Conditions

- A. Inspection – ConocoPhillips shall allow the Department’s representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment (CEMS, CERMS) or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.
- B. Waiver – The permit and the terms, conditions, and matters stated herein shall be deemed accepted if ConocoPhillips fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving ConocoPhillips of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.* (ARM 17.8.756).
- D. Enforcement – Violations of limitations, conditions, and requirements contained herein may constitute grounds for permit revocation, penalties, or other enforcement action as specified in Section 75-2-401, *et seq.*, MCA.
- E. Appeals – Any person or persons jointly or severally adversely affected by the Department’s decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay the Department’s decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of the Department’s decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, the Department’s decision on the application is final 16 days after the Department’s decision is made.
- F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy the air quality permit shall be made available for inspection by the Department at the location of the source.
- G. Permit Fee – Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, failure to pay the annual operation fee by ConocoPhillips may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

**ATTACHMENT 1**  
**ConocoPhillips Company – Helena Terminal**  
**Test Methods and Compliance Procedures**

1. In determining compliance with Section II.A.7. of this permit, the following procedures shall be used:
  - a. Calibrate and install a pressure measurement device (liquid manometer or equivalent instrument) capable of measuring up to 500 millimeters (mm) (20 inches (in.)) of water gauge pressure with  $\pm 2.5$  mm (0.10 in.) of water precision.
  - b. Connect the pressure measurement device to a pressure tap in the terminal's vapor recovery system, located as close as possible to the connection with the gasoline railcar.
  - c. During the performance test, record the pressure every 5 minutes (min) while a gasoline railcar is being loaded, and record the highest instantaneous pressure that occurs during each loading. Every loading position shall be tested at least once during the performance test.
2. In determining compliance with the mass emission limitations in Section II.A.9. of this permit, the following reference methods shall be used:
  - a. In determining volume at the flare stack, Method 2A for all other vapor control systems.
  - b. In determining total organic compounds concentration at the flare stack, Method 25A or 25B. The calibration gas shall be either propane or butane.
3. Immediately prior to the performance test required for determining compliance with Sections II.A.7. and II.A.9. of this permit, all potential sources of vapor and liquid leakage from the terminal's vapor recovery system equipment shall be monitored for leaks according to the procedures in Attachment 2 to this permit. The monitoring shall be conducted only while a gasoline railcar is being loaded. A reading of 10,000 parts per million by volume (ppmv) or greater as methane shall be considered a leak. All leaks shall be repaired prior to conducting the performance test.
4. The test procedure for determining compliance with Sections II.A.7. and II.A.9. of this permit is as follows (unless another test has been approved by the Department):
  - a. All testing equipment shall be prepared and installed as specified in the appropriate test methods.
  - b. The time period for a performance test shall be not less than 6 hours, during which at least 300,000 Liters (L) (80,000 gallons (gal)) of gasoline are loaded. If the throughput criterion is not met during the initial 6 hours, the test may be either continued until the throughput criterion is met, or resumed the next day with another complete 6 hours of testing. As much as possible, testing should be conducted during the 6-hour period in which the highest throughput normally occurs.

- c. For intermittent vapor control systems:
  - i. The vapor holder level shall be recorded at the start of the performance test. The end of the performance test shall coincide with a time when the vapor holder is at its original level.
  - ii. At least two startups and shutdowns of the vapor processor shall occur during the performance test. If this does not occur under automatically controlled operation, the system shall be manually controlled.
- d. The volume of gasoline dispensed during the performance test period at all loading racks whose vapor emissions are controlled by the vapor processing system being tested shall be determined. This volume may be determined from terminal records or from gasoline dispensing meters at each loading rack.
- e. An emission testing interval shall consist of each 5-minute period during the performance test. For each interval:
  - i. The reading from each measurement instrument shall be recorded.
  - ii. The volume exhausted and the average total organic compounds concentration in the flare stack shall be determined, as specified in the appropriate test method. The average total organic compounds concentration shall correspond to the volume measurement by taking into account the sampling system response time.

$$M_{ei} = 10^{-6} K V_{es} C_e$$

- f. The mass emitted during each testing interval shall be calculated as follows:  
where:

$M_{ei}$	=	Mass of total organic compounds (milligrams (mg)) emitted during testing interval i.
$V_{es}$	=	Volume of air-vapor mixture exhausted (cubic meters (m <sup>3</sup> )), at standard conditions.
$C_e$	=	Total organic compounds concentration (measured as carbon) at the exhaust vent (ppmv).
$K$	=	Density of calibration gas (milligrams/cubic meter (mg/m <sup>3</sup> )) at standard conditions (1.83x10 <sup>6</sup> for propane; 2.41x10 <sup>6</sup> for butane).
$S$	=	Standard conditions, 20°C and 760 millimeters of mercury (mm Hg).

$$E = \frac{\sum_{i=1}^n M_{ei}}{L}$$

- g. The total organic compounds mass emissions shall be calibrated as follows:  
where:

E = Mass of total organic compounds emitted per volume of gasoline loaded,  
mg/L.

L = Total volume of gasoline loaded, liters.

N = Number of testing intervals.

5. Alternate test methods may be used for determining compliance only after approval from the Department.

**ATTACHMENT 2**  
**Leak Detection Methods for Volatile Organic Compounds (VOCs)**  
**Test Methods and Compliance Procedures**

1. Permittees required to perform a loading rack performance test shall comply with the following requirements:
  - a. Monitoring shall be performed in accordance with Method 21 of 40 CFR Part 60, Appendix A.
  - b. The detection instrument shall meet the performance criteria of Method 21.
  - c. The detection instrument shall be calibrated before and after use on each day of its use by the methods specified in Method 21. Failure to achieve a post-use calibration precision of less than 10 percent shall constitute grounds for rejecting all tests performed since the last pre-use calibration. In such cases, required leak tests must be redone.
  - d. Calibration gases shall be:
    - i. Zero air (less than 10 parts per million (ppm) of hydrocarbon in air).
    - ii. A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.
  - e. The detection instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Method 21.
2. When equipment is tested for compliance with the requirement that there be no detectable emissions, the test shall comply with the following:
  - a. The requirements of (1)(a) through (1)(e) of this attachment shall apply and shall be met; and
  - b. The background level shall be determined as set forth in Method 21.
3. Alternate test methods may be used for determining compliance only after approval from the Department.

PERMIT ANALYSIS  
ConocoPhillips Company – Helena Terminal  
Permit #2907-03

I. Introduction/Process Description

A. Permitted Equipment

ConocoPhillips Company (ConocoPhillips) operates a bulk fuel terminal that includes the following equipment:

- Product storage tanks T-30 through T-37;
- Rail car loading rack;
- Railcar loading rack enclosed flame vapor combustor (flare);
- Tank truck loading rack;
- Tank truck loading rack flare;
- Miscellaneous additive tanks

B. Source Description

ConocoPhillips operates a bulk gasoline terminal, which receives gasoline and distillate fuels from the Yellowstone Pipeline and distributes them around the state via railcar and tank truck. This facility is located in the SE<sup>1</sup>/<sub>4</sub> of the NE<sup>1</sup>/<sub>4</sub> of Section 28, Township 10 North, Range 3 West, in Lewis and Clark County, Montana. The facility is known as the Helena bulk terminal.

1. Product Storage Tanks

<u>Tank #</u>	<u>Yr manuf.</u>	<u>Fuel Stored</u>	<u>Cap. (Bbls)</u>	<u>Type of Tank</u>
T-30	1953	Jet Kerosene	20,000	Fixed roof
T-31	1953	#2 Diesel	30,000	Fixed roof
T-32	1953	Gasoline	20,000	Int. flt. Roof
T-33	1953	Gasoline	30,000	Int. flt. Roof
T-35	1959	Gasoline	30,000	Ext. flt. Roof
T-36	1959	Gasoline	30,000	Ext. flt. Roof
T-37	1959	Gasoline	30,000	Ext. flt. Roof

2. Railcar Loading

The product loading rack consists of 6 loading arms capable of loading gasoline or distillate fuel.

3. Railcar Loading Rack Enclosed Flame Vapor Combustor (Flare)

A Vapor Recovery System will capture the gasoline vapors from the railcar loading operation and thermally oxidize the vapors in a John Zink enclosed flare or equivalent.

4. Tank Truck Loading Rack

Tank truck loading of gasoline and distillate is accomplished at the product truck loading rack. The truck loading rack consists of 4 distillate loading arms and 4 gasoline loading arms.

5. Tank Truck Loading Rack Flare

A Vapor Recovery System will capture the gasoline vapors from the tank truck loading operation and thermally oxidize the vapors in a John Zink flare or equivalent.

6. Fugitive Emissions are from total facility valves, flanges, pump seals, and open-ended lines.

7. Miscellaneous Additive Tanks containing fuel detergents and lubricity additive.

C. Permit History

The original facility included 2 distillate tanks (T-30 and T-31), 2 gasoline tanks (T-32 and T-33), a gasoline and distillate railcar loading rack, and a gasoline and distillate truck loading rack. The truck rack consists of 4 distillate loading arms and 4 gasoline loading arms. The railcar loading rack consists of 4 loading arms capable of loading gasoline and distillate. In 1959, Conoco, Inc. (Conoco), added gasoline storage tanks T-35, T-36, and T-37.

On January 24, 1996, Permit #2907-00 was issued for Conoco to expand their rail loadout facility to accommodate the loading of gasoline. The proposed changes to the product railcar loading rack consisted of the removal of the existing loading arms and the installation of 6 new loading arms capable of loading gasoline and distillate fuel. Volatile organic compound (VOC) and hazardous air pollutant (HAP) emissions from the gasoline railcar loadout were controlled with an enclosed flare. The control on the gasoline railcar, combined with the throughput limits on the truck loading rack, kept Conoco below Title III MACT applicability thresholds.

On February 14, 2002, Permit #2907-01 was issued to Conoco for construction and operation of a new truck loading rack and installation of a flare to control loading emissions. The new loading rack replaced the existing truck loading rack at the Helena Products Terminal. The Helena Products Terminal operated under a Title V operating permit because the facility was considered a major source for VOC emissions. The installation of the flare on the truck loading rack significantly reduced VOC emissions below the major source threshold. The flare was controlled beyond New Source Performance Standards (NSPS), which was considered to be Best Available Control Technology (BACT) for similar loading racks. The Montana Department of Environmental Quality (Department) had grounds to revoke the Title V permit following appropriate installation of the flare and at Conoco's request; however, Conoco was considered a Title V synthetic minor.

The limit on the VOC emissions from the flare was as follows: the total VOC emissions to the atmosphere from the flare due to loading liquid product into tank trucks shall not exceed 10.0 milligrams per liter (mg/L) of gasoline loaded. This limit is more stringent than the 40 code of federal regulations (CFR) 60, Subpart XX, VOC emissions limit of 35.0 mg/L of gasoline loaded. The source complied with the Subpart XX 35.0 mg/L limit by maintaining compliance with the 10.0 mg/L limit in Permit #2907-01.

Because Conoco's flare was defined as an incinerator under Montana Code Annotated (MCA) 75-2-215, a determination that the emissions from the flare would constitute a negligible risk to public health was required prior to the issuance of a permit to the facility.



Conoco and the Department identified the following hazardous air pollutants from the flare, which were used in the health risk assessment. These constituents are typical components of gasoline.

1. Benzene
2. Ethyl Benzene
3. Hexane
4. Toluene
5. Xylenes

The reference concentrations for the above pollutants were obtained from EPA's IRIS database, where available. The model performed for the hazardous air pollutants identified above demonstrated compliance with the negligible risk requirement. Permit **#2907-01** replaced Permit #2907-00.

A letter from ConocoPhillips dated January 3, 2003, and received by the Department January 10, 2003, notified the Department that Conoco had changed its name to ConocoPhillips. The permit action changed the facility name from Conoco to ConocoPhillips. Permit **#2907-02** replaced Permit #2907-01.

D. Current Permit Action

A letter from ConocoPhillips dated November 24, 2004, and received by the Department December 1, 2004, notified the Department that ConocoPhillips planned to install a 2,000-gallon vertical tank used to store a lubricity additive. Since the uncontrolled potential to emit (PTE) of the 2,000-gallon vertical tank is less than 15 tons per year of any regulated pollutant the tank was added to the permit under the provisions of administrative Rules of Montana (ARM) 17.8.745 Montana Air Quality Permits--Exclusion for de minimis Changes. Permit #2907-03 has also been updated to reflect current permit language and rule references used by the Department. Permit **#2907-03** replaces Permit #2907-02.

E. Additional Information

Additional information, such as applicable rules and regulations, BACT determinations, air quality impacts, and environmental assessments, is included in the analysis associated with each change to the permit.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the ARM and are available upon request from the Department. Upon request, the Department will provide references for locations of complete copies of all applicable rules and regulations or copies where appropriate.

A. ARM 17.8, Subchapter 1 – General Provisions, including, but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment including instruments and sensing devices and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source, or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq.*, MCA.

ConocoPhillips shall comply with all requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation, or to continue for a period greater than 4 hours.
5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means which, without resulting in reduction in the total amount of air contaminant emitted, conceals, or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public notice.

B. ARM 17.8, Subchapter 2 – Ambient Air Quality, including, but not limited to:

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for PM<sub>10</sub>

ConocoPhillips must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 – Emission Standards, including but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.
2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, ConocoPhillips shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.
3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires

that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.

4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.
5. ARM 17.8.316 Incinerators. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any incinerator, particulate matter in excess of 0.10 grains per standard cubic foot of dry flue gas, adjusted to 12% carbon dioxide and calculated as if no auxiliary fuel had been used. Further, no person shall cause or authorize to be discharged into the outdoor atmosphere from any incinerator emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes.
6. ARM 17.8.322 Sulfur Oxide Emissions—Sulfur in Fuel. This rule requires that no person shall burn liquid, solid, or gaseous fuel in excess of the amount set forth in this rule.
7. ARM 17.8.324 Hydrocarbon Emissions - Petroleum Products. (3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device as described in (1) of this rule.
8. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates by reference, 40 CFR Part 60, Standards of Performance for NSPS. ConocoPhillips is considered an NSPS affected facility under 40 CFR 60 and is subject to the requirements of the following subparts:

40 CFR 60, Subpart A – General Provisions applies to all equipment or facilities subject to an NSPS Subpart listed below.

40 CFR 60, Subpart XX – Standards of Performance for Bulk Gasoline Terminals applies to loading racks at bulk gasoline terminals that load product into gasoline tank trucks which commenced construction or modification after December 17, 1980. Subpart XX applies to ConocoPhillips’ proposed truck loading rack, but not to the railcar loading rack, as it was constructed prior to December 17, 1980.
9. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. The source, as defined and applied in 40 CFR Part 63, shall comply with the requirements of 40 CFR 63. Since the emission of HAPs from the ConocoPhillips facility is less than 10 tons per year for any individual HAP and less than 25 tons per year for all HAPs combined, the ConocoPhillips facility is not subject to the provisions of 40 CFR Part 63. ConocoPhillips is considered an “area source” of HAPs with respect to 40 CFR 63, Subpart R (the Gasoline Distribution Maximum Achievable Control Technology (MACT)).

D. ARM 17.8, Subchapter 4 – Stack Height and Dispersion Techniques, including but not limited to:

1. ARM 17.8.401 Definitions. This rule includes a list of definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.402 Requirements. ConocoPhillips must demonstrate compliance with the ambient air quality standards with a stack height that does not exceed Good Engineering Practices (GEP).

E. ARM 17.8, Subchapter 5 – Air Quality Permit Application, Operation, and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. ConocoPhillips was not required to submit a fee because the current permitting action is administrative.
2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by the Department. The air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

An air quality operation fee is separate and distinct from an air quality application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions which prorate the required fee amount.

F. ARM 17.8, Subchapter 7 – Permit, Construction, and Operation of Air Contaminant Sources, including but not limited to:

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit alteration to construct, alter, or use any air contaminant sources that have the PTE greater than 25 tons per year of any pollutant. ConocoPhillips' Helena facility has the PTE more than 25 tons per year of carbon monoxide (CO) and VOC; therefore, an air quality permit is required.
3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.
4. ARM 17.8.745 Montana Air Quality Permits--Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.

5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, alteration, or use of a source. ConocoPhillips was not required to submit an application for the current permit action because it is considered administrative.
6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.
7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. A BACT analysis was not required because the current permitting action is administrative.
8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available, for inspection by the Department, at the location of the source.
9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving ConocoPhillips of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.*
10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.
11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or altered source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.
12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).
13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with

ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.

14. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of intent to transfer, including the names of the transferor and the transferee, is sent to the Department.
15. ARM 17.8.770 Additional Requirements for Incinerators. This rule specifies the additional information that must be submitted to the Department for incineration facilities subject to 75-2-215, MCA.

G. ARM 17.8, Subchapter 8 - Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.
2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

This facility is not a major stationary source since this facility is not a listed source and the facility's PTE is below 250 tons per year (tons/year) of any pollutant (excluding fugitive emissions).

H. ARM 17.8, Subchapter 12 - Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:
  - a. PTE > 100 tons/year of any pollutant;
  - b. PTE > 10 tons/year of any one HAP, PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or
  - c. PTE > 70 tons/year of PM<sub>10</sub> in a serious PM<sub>10</sub> nonattainment area.
2. ARM 17.8.1204 Air Quality Operating Permit Program. (1) Title V of the FCAA Amendments of 1990 requires that all sources, as defined in ARM 17.8.1204 (1), obtain a Title V Operating Permit. In reviewing and issuing Air Quality Permit #2907-03 for ConocoPhillips' Helena bulk terminal, the following conclusions were made.
  - a. The facility's PTE is less than 100 tons/year for any pollutant.
  - b. The facility's PTE is less than 10 tons/year of any one HAP and less than 25 tons/year of all HAPs.

- c. This source is not located in a serious PM<sub>10</sub> nonattainment area.
- d. The facility is not subject to any current NESHAP standards.
- e. The source is not a Title IV affected source or a solid waste combustion unit.
- f. The source is not an EPA designated Title V source.

ConocoPhillips' Helena bulk terminal is not subject to Title V Operating Permit requirements because federally enforceable conditions for the new loading rack and its control equipment have been established that limit the source's PTE below the major source threshold. After confirmation is received that the new loading rack has been installed and is operating, the Department will revoke the current Title V Permit for ConocoPhillips (#OP2907-00). However, if minor sources subject to NSPS are required to obtain a Title V Operating Permit, ConocoPhillips will be required to obtain an operating permit.

- g. ARM 17.8.1204(3). The Department may exempt a source from the requirement to obtain an air quality operating permit by establishing federally enforceable limitations that limit that source's PTE.
  - i. In applying for an exemption under this section the owner or operator of the source shall certify to the Department that the source's PTE does not require the source to obtain an air quality operating permit.
  - ii. Any source that obtains a federally enforceable limit on PTE shall annually certify that its actual emissions are less than those that would require the source to obtain an air quality operating permit.

The Department has determined that the annual reporting requirements contained in the permit are sufficient to satisfy this requirement.

- 3. ARM 17.8.1207 Certification of Truth, Accuracy, and Completeness. The compliance certification submittal required by ARM 17.8.1204(3) shall contain certification by a responsible official of truth, accuracy, and completeness. This certification and any other certification required under this subchapter shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

I. MCA 75-2-103, Definitions provides in part as follows:

- 1. "Incinerator" means any single or multiple-chambered combustion device that burns combustible material, alone or with a supplemental fuel or catalytic combustion assistance, primarily for the purpose of removal, destruction, disposal, or volume reduction of all or any portion of the input material.
- 2. "Solid waste" means all putrescible and non-putrescible solid, semi-solid, liquid, or gaseous wastes including, but not limited to air pollution control facilities.

- J. MCA 75-2-215, Solid or hazardous waste incineration -- additional permit requirements, including but not limited to the following requirements:

The Department may not issue a permit to a facility until: (d) the Department has reached a determination that the projected emissions and ambient concentrations will constitute a negligible risk to the public health, safety, and welfare and to the environment.

For Permit #2907-01 Conoco submitted modeling identifying the maximum concentration of HAPs released from the flare. The Department performed a risk assessment from that data identifying the health risks from the burning of HAPs in the flare. The risk assessment contained the HAPs from the 1990 FCAA Amendments with an established risk value. The ambient concentrations were determined using SCREEN3 modeling and the risk assessment model used EPA's unit risk estimates and reference concentrations (EPA IRIS database). The Department included limits in the permit to ensure the amount of material used in the models is not exceeded. The risk assessment results have been summarized in the following table:

Conoco Flare Risk Assessment – Helena

Chemical Compound	Annual Concentration µg/m3	Cancer ELCR	Non-Cancer Hazard Quotient	
		Chronic	Chronic	Acute
Benzene	3.83E <sup>-03</sup>	2.99E <sup>-05</sup>	0.0000	ND*
Toluene	5.51E <sup>-03</sup>	ND	0.0000	ND
Ethylbenzene	4.21E <sup>-04</sup>	ND	0.0000	ND
Xylenes	2.08E <sup>-03</sup>	ND	0.0000	ND
n-Hexane	6.90E <sup>-03</sup>	ND	0.0000	ND
Iso-Octane (2,2,4-Trimethylpentane)	3.46E <sup>-03</sup>	ND	0.0000	ND
Total Risks =		2.99E <sup>-05</sup>	0.0001	ND

\*No Data available in EPA's IRIS database

In addition to evaluating the annual concentrations using EPA's unit risk estimates, the concentration values were also compared to values in Tables I and II of ARM 17.8.706(5) as listed in the table below:

Chemical Compound	Annual Concentration µg/m3	Annual Cancer µg/m3	Annual Non-Cancer µg/m3	
			Chronic	Acute
Benzene	3.83E <sup>-03</sup>	1.20E <sup>-02</sup>	7.10E <sup>-01</sup>	ND*
Toluene	5.51E <sup>-03</sup>	ND	4.00E <sup>+00</sup>	ND
Ethylbenzene	4.21E <sup>-04</sup>	ND	1.00E <sup>+01</sup>	ND
Xylenes	2.08E <sup>-03</sup>	ND	3.00E <sup>+00</sup>	4.40E <sup>+01</sup>
n-Hexane	6.90E <sup>-03</sup>	ND	2.00E <sup>+00</sup>	ND
Iso-Octane (2,2,4-Trimethylpentane)	3.46E <sup>-03</sup>	ND	ND	ND

\*No Data available

Because the ambient concentrations of HAPs are less than the concentrations contained in Table I and Table II of ARM 17.8.706(5), these HAPs may be excluded from further review. The Department determined the health risk assessment model demonstrates negligible risk to public health in this case.



### III. BACT Determination

A BACT determination is required for each new or altered source. ConocoPhillips shall install on the new or altered source the maximum air pollution control capability, which is technically practicable and economically feasible, except that BACT shall be utilized. Because this permit action is administrative, no BACT determination was completed.

### IV. Emission Inventory

#### Helena Products Terminal, Permit #2907-03:

**Controlled Emissions for Criteria Pollutants** (Controlled indicates emissions based off of emission factors and manufacturer's specifications, some of which are not conditions in the permit, and therefore, not federally enforceable)

Source	VOC	NO <sub>x</sub>	Tons/year CO	SO <sub>2</sub>	PM <sub>10</sub>
Storage Tanks	33.2				
Loading Racks and Flaring	28.7	11.5	28.7	0.0	0.0
Fugitive (Equipment Leaks)	0.5				
Miscellaneous	2.3				0.03
Total Emissions	64.7	11.5	28.7	0.0	0.03

#### Allowable Emissions for HAPs

HAP	Tons/year
Benzene	0.43
Toluene	0.60
Ethylbenzene	0.04
Xylenes	0.19
n-Hexane	0.85
Iso-Octane	0.43
Total HAPs	2.55

#### Detail:

##### Tanks (standing and working losses from facility storage tanks):

Total Tank VOC emissions = 66,316.4 lb/yr \* 0.0005 ton/lb = 33.2 ton/yr

Emissions calculated using EPA Tanks v.4.09b Storage Tank Emissions Calculation Software.

##### Loading Racks and Flaring Emissions (for both the truck and the rail loading racks and associated flares):

Emissions (E, lb/yr) = Emission Factor (EF, lb/Mgal) \* Annual throughput of material (Q, Mgal/yr)  
where Q = the sum of the annual gasoline and distillate from truck and rail loading.

Annual loading rack emissions are based on potential 100% gasoline throughput (Mgal/yr) and emission factors provided by the flare manufacturer (John Zink).

#### CO

EF = 10.0 mg/L of gasoline loaded (per manufacturer's specifications) = 0.0834 lb/Mgal

E = 0.0834 lb/Mgal \* 688,535 Mgal/yr \* 0.0005 ton/lb = 28.7 ton/yr

NO<sub>x</sub>

EF = 4.0 mg/L of gasoline loaded (per manufacturer's specifications) = 0.0334 lb/Mgal

E = 0.0334 lb/Mgal \* 688,535 Mgal/yr \* 0.0005 ton/lb = 11.5 ton/yr

VOC

EF = 10.0 mg/L of gasoline loaded (per manufacturer's specifications) = 0.0834 lb/Mgal

E = 0.0834 lb/Mgal \* 688,535 Mgal/yr \* 0.0005 ton/lb = 28.7 ton/yr

#### Fugitive Emissions from Equipment Leaks (Leaks from process equipment: valves, connections, etc.)

Emissions (lb/yr) = Number of components \* EF (lb/hr-component) \* 8760 hr/yr

Basis for Emission Factors: EPA Protocol for Equipment Leak Emission Estimates, November 1995 (EPA-453/R-95-017)

Component Type	Number of Components	EF (lb/hr-component)	VOC Emissions (lb/hr)	VOC Emissions (lb/yr)
Valves	291	2.87E <sup>-05</sup>	0.00834	73.06
Connections	912	9.26E <sup>-05</sup>	0.08445	739.75
Open-ended Lines	49	2.65E <sup>-04</sup>	0.01296	113.56
Load Arms	19	2.65E <sup>-04</sup>	0.00503	44.03
Pumps and Meters	30	1.43E <sup>-04</sup>	0.00430	37.66

Total Liquid Fugitive VOC Emissions:

1008.06 lb/yr

Total Liquid Fugitive VOC Emissions:

0.50 ton/yr

#### Miscellaneous Emissions

Emissions (lb/yr) = Number of components \* EF (lb/yr-component)

Miscellaneous emissions include emissions from tank cleaning, additive tanks, and meter provings. Emissions estimations are based on process knowledge and engineering calculations.

Component Type	Number of Components	EF (lb/yr-component)	VOC Emissions (lb/yr)
Tank Cleaning	N/A	737.4	737.4
WW Tanks	1	399.5	399.5
WW Sumps	3	613.0	1839.0
OW Sep	1	11.0	11.0
Provers	N/A	350.0	350.0
Rack Drains	2	613.0	1226.0
Additive Tanks	2	37.4	74.9

Total Miscellaneous VOC Emissions:

4637.8 lb/yr

Total Miscellaneous VOC Emissions:

2.3 ton/yr

#### HAP Emissions

HAP emissions are estimated from VOC emissions based on VOC vapor HAP composition. Liquid/vapor and vapor HAP to VOC percentage by weight is applied to total VOC mass emissions for each respective stream to yield mass HAP emissions.

#### Loadout and Fugitive Equipment Leak HAP Emissions (ton/yr)

Stream	VOC	Benzene	Toluene	Ethylbenzene	Xylenes	n-Hexane	Iso-Octane
Vapor	28.73	0.2585	0.3735	0.0287	0.1436	0.4596	0.2298
Liquid	2.82	0.0135	0.0181	0.0011	0.0040	0.0305	0.0158
<b>TOTAL</b>	<b>31.55</b>	<b>0.2721</b>	<b>0.3915</b>	<b>0.0299</b>	<b>0.1476</b>	<b>0.4901</b>	<b>0.2456</b>

**Gasoline Storage Tank HAP Emissions (ton/yr)**

<b>Stream</b>	<b>VOC</b>	<b>Benzene</b>	<b>Toluene</b>	<b>Ethylbenzene</b>	<b>Xylenes</b>	<b>n-Hexane</b>	<b>Iso-Octane</b>
Liquid	33.11	0.1589	0.2119	0.0132	0.0464	0.3576	0.1854

**HAP Speciation Factors – HAP/VOC**

HAP speciation factors (HAP/VOC) from the Gasoline Distribution Industry (Stage I) – Background Information for Proposed Standards, EPA-453/R-94-002a, January 1994, Appendix C, Table C-2 and Table C-5

<b>Stream</b>	<b>Benzene</b>	<b>Toluene</b>	<b>Ethylbenzene</b>	<b>Xylenes</b>	<b>n-Hexane</b>	<b>Iso-Octane</b>	<b>Total</b>
Gasoline (vapor)	0.90%	1.30%	0.10%	0.50%	1.60%	0.80%	5.20%
Gasoline (liquid)	0.48%	0.64%	0.04%	0.14%	1.08%	0.56%	2.94%

**V. Existing Air Quality**

ConocoPhillips is located in the SE¼ of the NE¼ of Section 28, Township 10 North, Range 3 West, in Lewis and Clark County, Montana. This area is considered attainment for all criteria pollutants. The majority of the emissions from the facility are VOC.

**VI. Ambient Air Impact Analysis**

The Department did not conduct ambient air modeling for this permit action. The Department believes it will not cause or contribute to a violation of any ambient air quality standard because the permit action was accomplished under the provisions of ARM 17.8.745.

**VII. Taking or Damaging Implication Analysis**

As required by 2-10-105, MCA, the Department conducted a private property taking and damaging assessment and determined there are no taking or damaging implications.

**VIII. Environmental Assessment**

This permitting action was accomplished under the provisions of ARM 17.8.745 and is considered an administrative action; therefore, an Environmental Assessment is not required.

Permit Analysis Prepared By: Chris Ames

Date: December 8, 2004